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From: Separation Science e-Learning <noreply@sepscience.com>
Sent: Tuesday, February 05, 2013 1:09 PM
To: Hanchett, James (DPH)
Subject: Separation Science Applications Update

FEATURED APPLICATION

An Improved HPLC Method for the Separation of Norethindrone and Mestranol with Progesterone as Internal Standard

Thermo Fisher Scientific

One of the key goals for the chromatographer is to achieve a consistent, reproducible separation. The selection of a highly reproducible HPLC column is essential if this goal is to be attained. The Syncronis column range has been engineered to provide exceptional reproducibility due to its highly pure, high surface area silica. One area where this is important is in the manufacture and testing of pharmaceutical products in order to maintain product quality and consistency in the manufacturing process. A number of companies use standard USP methods to support quality testing but traditionally these have been developed on older column technologies. The development of new robust columns such as Syncronis and an increased acceptance of the use of smaller particle sizes present an opportunity to update such methods to take advantage of the superior reproducibility and robustness that can be achieved when using these columns.

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WHAT'S NEW

Sensitive Fluorescence Analysis of Aflatoxins using Post-column UV Derivatization on the Agilent 1260 Infinity LC
Agilent Technologies
The analysis of aflatoxins in food matrices such as grain and nuts is an important task for the food industry to ensure product safety. This Application Note shows the analysis of the four major aflatoxins with post column UV derivatization and fluorescence detection.
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Supelco SLB®-IL60 Ionic Liquid GC Columns
Supelco / Sigma-Aldrich
The SLB-IL60 column is able to undergo the same analyte-phase interactions as polyethylene glycol (PEG) columns, but at different relative amounts. Based on its unique phase structure, the SLB-IL60 column is also able to undergo additional interactions that PEG columns cannot.
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Kinetex® 5 µm Core-Shell Columns Deliver Significant Improvements in Chromatographic Efficiency and Resolution versus Traditional Fully Porous 5 µm Columns
Phenomenex
Kinetex 5 µm core-shell technology columns provide chromatographers a simple solution for dramatically improving the performance of their methods developed on 5 µm fully porous columns. This newly introduced core-shell media delivers backpressures of a fully porous 5 µm particle at efficiencies equal to or better than a fully porous 3 µm particle. Without the need for extensive method development, replacing the fully porous 5 µm column with the Kinetex 5 µm core-shell column results in improved chromatographic resolution and sensitivity. In addition, the lower backpressure can provide many benefits such as longer column lifetime, higher throughput, and increased system compatibility.
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Extraction of 1, 25 Dihydroxyvitamin D From Human Serum Using ISOLUTE® SLE+ Prior to LC-MS/MS Analysis
Biotage
This application note describes the supported liquid extraction of 1, 25 dihydroxyvitamin D2 and D3 from human serum prior to quantitative LC-MS/MS analysis. This methodology has been designed to give an effective and efficient supported liquid extraction protocol for the clean-up and concentration of 1, 25 dihydroxyvitamin D2 and D3, important metabolites in the assessment of vitamin D deficiency. Analyte recoveries achieved using this method ranged from 75-78% with RSDs below 10% for both analytes.
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Using TargetView to Reliably Estimate the Abundance of Identified Compounds
Almsco
This Application Note describes how peak areas defined by the TargetView™ data-mining software package can be used to estimate the abundance of identified compounds. Excellent correlation is demonstrated between these abundances and those determined using 'full' quantitation using a leading conventional GC/MS software package.
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Molecular Weight Determination of LMWH SEC/MALS vs. SEC/UV-RI
Wyatt Technology
Low-molecular-weight heparins (LMWHs) are obtained by fractionation or depolymerization of natural heparins. They are defined as having a mass-average molecular weight of less than 8000 and for which at least 60% of the total weight has a molecular mass less than 8000.
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Chromate in Die Samples Using Post-column Reaction and Subsequent UV/VIS Detection
Metrohm
Dye samples are analyzed for trace chromate. Chromate (Cr(VI)) is considered toxic and potentially carcinogenic for which reason its concentrations should be as low as possible. This sample is prepared with C18 cartridges and injected applying Metrohm intelligent Preconcentration Technique (MiPCT). After each injection, the preconcentration column requires additional rinsing to eliminate matrix effects. For this purpose, no other instrument than an 800 Dosino is required. The system is optimized for sample volumes between 20 and 2000 µL. For most samples, additional rinsing of the preconcentration column is not required.
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Determination of α-acids in Hops and Beers
PerkinElmer
Hops are crucial in beer brewing. They are added after the malting of the grains and provide beers with their recognizable bitter taste and aroma. The widespread use of hops in beer dates back to the sixteenth century. However, as early as in the eleventh century it was used as a natural preservative in central Europe (today Germany); the outcome was not only a well preserved beer, but a beer with a distinctive smell and taste.
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Published by Eclipse Business Media Ltd
Frederick House | Princes Court | Beam Heath Way | Nantwich | Cheshire CW5 6PQ | United Kingdom
20 Maxwell Road | #09-17 Maxwell House | Singapore 069113